

AMENDMENTS TO THE SPECIFICATION:

**Page 1, lines 4-7, amend the paragraph as:**

The present invention relates to an evacuated glass panel having a degassing device and, particularly, to an evacuated glass panel having a degassing device disposed in an evacuated chamber of a thin thinner evacuated glass panel, ~~the panel~~. The present invention concerns the technical field of glass manufacturing.

**Page 1, lines 9-11, amend the paragraph as:**

~~The~~ An evacuated glass panel is a high thermo and sound insulating glass panel made by evacuation of the space between planar glass sheets[.], of which the periphery ~~of which~~ is sealed.

**Page 1, lines 12-18, amend the paragraph as:**

The evacuated glass ~~panel is forgo rapidly ahead~~ panel has been developed and manufactured through nearly a hundred years of investigation and development. ~~Both the theoretical study and~~ It has been proved that an evacuated glass panel is an ideal thermo and sound insulating material that ~~and~~ it can be used in doors and windows of buildings and thermo-insulating cabinets, refrigerators or freezing cabinets in order to achieve a ehive higher thermo and sound insulating effect, ~~must provide higher degree of~~ evacuation.

**Page 1, lines 19-20, amend the paragraph as:**

In order to increase the degree of evacuation people commonly employs a degassing device disposed in the space between planar glass sheets.

**Page 1, lines 21 to page 2, line 1, amend the paragraph as:**

The degassing device is made from powder-particles of an alloy containing zirconium (Zr) and aluminum (Al) as main composition (84% Zr and 16% Al ), pressed on a metal base.

**Page 2, lines 2-6, amend the paragraph as:**

After disposing the degassing device in the space between planar glass sheets of an evacuated glass panel, ~~employing the vaporization is~~ activated by high frequency[[,]] to form a fresh interface, which has a strong adsorption to remove ~~for~~ the residual gas left in the evacuated space, ~~there by~~ thereby increasing the degree of evacuation and resistance ~~resisting~~ to radiation of the evacuated glass panel.

**Page 2, lines 7-9, amend the paragraph as:**

However, ~~during manufacturing evacuated glass panel in~~ manufacturing evacuated glass panels having smaller thickness, the deposition of the ~~disposing~~ degassing device between planar glass sheets ~~became~~ becomes very difficult.

**Page 2, lines 10-13, amend the paragraph as:**

Because the space between planar glass sheets is very small, and the size of the degassing device is always larger than the space between planar glass sheets of an evacuated glass panel, ~~such~~ the degassing device can not be placed in.

**Page 2, lines 14-16, amend the paragraph as:**

At present, the method for the placement of the degassing device in a thinner evacuated glass panel is to form a groove on the surface of the planar glass sheet of the

evacuated glass panel for placing the degassing device.

**Page 2, line 17 to page 3, line 3, amend the paragraph as:**

The evacuated glass panel made by this method has greatly reduced its mechanical strength, ~~this is because that~~ at the time of groove forming, ~~around groove~~ the stress around the groove is excessively concentrated, and at the same time ~~around groove~~ a micro crack is easily occurred around the groove. ~~When , and when~~ the degassing device is heated to high temperature, the micro crack may further spread. The micro crack and the concentration of stress may lead to fracture of the evacuated glass panel during manufacture process or practical use. ~~Therefore, therefore,~~ the concentration of stress and occurrence of micro cracks greatly decrease the mechanical strength of the evacuated glass panel.

**Page 3, lines 4-18, amend the paragraph as:**

In addition, because the air discharge hole of a traditional evacuated glass panel is sealed by a small pump-out tube through solder glass (a low melting point glass powder) ~~and soldered in the air discharge hole, during sealing air discharge hole,~~ the end of the pump-out tube has to be is heated to melt and ~~join~~ close the tube to seal the air discharge hole. Because the hole sealing place is protruded from the planar glass sheet, [[a]] further ~~technologie~~ treatment is necessary. ~~If , if~~ a mechanic cap or a sealing layer ~~proteet~~ is added, the structure ~~for of~~ sealing the air discharge hole is rather complex, and many operations ~~is~~ are necessary. ~~In ; in~~ some case the solder glass ~~and~~ sealing piece is used to ~~sealing seal the air discharge hole, however, hole. However,~~ in order to insure absence of air leak in the air discharge hole, the solder glass ~~and~~ sealing piece is protruded from the

planar glass sheet after it is melted. ~~Due to~~ Because the sealing place of the air discharge hole is uneven after its sealing, ~~said the~~ said the sealing place is easy to be damaged and may result ~~resulted~~ in air leak during assembling and transporting the evacuated glass panel, there-by thereby losing the thermo and sound-insulating effect of the evacuated glass panel.

**Page 3, line 20 to page 4, line 8, amend the paragraph as:**

The main object of the present invention is, ~~regarding to~~ overcome the above problem of disposing a degassing device during the production process of an evacuated glass panel, ~~to provide by providing~~ an evacuated glass panel having a degassing device, ~~this device. The~~ the evacuated glass panel having a degassing device not only resolves ~~can resolve~~ the problem of difficulty in disposing a degassing device ~~on one hand,~~ particularly within an evacuated glass panel having smaller thickness, ~~and but~~ but also effectively avoids or greatly reduces the inner stress and micro cracks at the place of the degassing device, ~~on the other hand, there by increasing the mechanic strength of~~ evacuated glass panel, making it not easy to break in use and increasing the ratio of qualitative evacuated glass panel during production.

**Page 4, lines 9-14, amend the paragraph as:**

A further object of the present invention is, ~~regarding to~~ overcome the above drawbacks ~~shortage~~ in operation complexity and easy air leak, ~~to provide by providing an~~ an evacuated glass panel having a degassing device, ~~said evacuated glass panel has~~ with an even sealing surface at ~~of~~ the air discharge hole, ~~effectively overcoming to effectively~~ prevent the problem of a traditional protruded sealing surface that is easily damaged to

~~cause easy to be damaged and resulted in air leak.~~

**Page 4, cancel lines 15-16.**

**Page 4, lines 16 to page 5, line 3, amend the paragraph as:**

An evacuated glass panel having a degassing device, ~~which of the present invention includes at least two planar glass sheets having any shape and support means disposed therebetween. An~~ [[.]] edge frame component is used to seal ~~sealed~~ around the periphery of the planar glass sheet, and ~~the~~ degassing device is disposed in the evacuated space of ~~the~~ evacuated glass panel. ~~The~~ ~~;~~ ~~said~~ degassing device is placed in the groove opened on ~~the~~ inner surface of ~~the~~ planar glass sheet. ~~Between the~~ ~~;~~ ~~between said~~ degassing device and ~~the~~ ~~said~~ groove a low melting point glass powder layer is placed to fix and joint the ~~;~~ ~~and said~~ degassing device ~~through said low melting point glass powder layer is fixed and joined in said~~ to the groove.

**Page 5, lines 4-6, amend the paragraph as:**

~~Said~~ In one embodiment, the groove is opened on the inner surface at the same position of each of the two planar glass sheets and the ~~;~~ ~~in said groove said~~ low melting point glass powder layer is applied in the groove.

**Page 5, lines 7-10, amend the paragraph as:**

~~Said~~ The degassing device is simultaneously inserted into the groove on the inner surface at the same position of each of the two planar glass sheets, and fixed and joined with the groove through the ~~said~~ low melting point glass powder layer fixed and joined ~~with said groove~~.

**Page 5, lines 11-16, amend the paragraph as:**

~~Said~~ In another embodiment, the planar glass sheet has a sealing piece inserted on its outer surface for sealing the air discharge hole. Around ~~around~~ the periphery of the ~~said~~ air discharge hole at the outer surface of the planar glass sheet a concave portion is opened for inserting the sealing piece. The  ~~Said~~ sealing piece through the low melting point-glass-powder-layer is used to melt and joint ~~join~~ with the concave portion to and close the ~~said~~ air discharge hole through the low melting point glass powder layer.

**Page 5, lines 17-19, amend the paragraph as:**

~~Said~~ The sealing piece has a thickness corresponding to the ~~total thickness of the low melting point glass powder layer and equal to the deep-ness of said~~ depth of the concave portion. A groove is opened on the inner surface of another planar glass sheet at the position corresponding to the air discharge hole. When the degassing device is inserted into the air discharge hole, the bottom end of the degassing device is fixed in the groove. The top end of the degassing device is fixed and jointed with the sealing piece by the low melting point glass powder layer which is formed through sintering the low melting point glass powders.

**Page 5, cancel lines 20-22.**

**Page 6, cancel lines 1-3.**

**Page 6, lines 4-10, amend the paragraph as:**

In the present ~~technical schemes of this~~ invention, the low melting point glass powder is applied in the groove[[,]] in which the degassing device is fixed, and after

sintering it becomes a low melting point glass powder layer. This scheme can insure ~~that~~  
~~under the premise of further increasing degree of evacuation, to eliminate the effluence of~~  
~~will not create~~ stress concentration and micro cracks ~~on the strength of~~ evacuated glass  
panel by ~~because of the existence of the~~ low melting point glass powder layer.

**Page 6, lines 11-16, amend the paragraph as:**

Because the degassing device is sintered to ~~the~~ groove of ~~the~~ planar glass, ~~and the~~  
low melting point glass powder has thermal conductivity far lower than that of glass, the  
instantaneous heating ~~of the~~ degassing device ~~does~~ not exert a very large ~~influence~~  
~~impact to the glass panel, there by~~ ~~and therefore the yield decreasing the energy~~  
~~consumption and increasing operation effect, and the ratio of the~~ qualitatively finished  
product is greatly improved.

**Page 6, line 17 to page 7, line 1, amend the paragraph as:**

~~This is not only one~~ In addition, in the ~~technical scheme of~~ present invention  
because ~~the groove is simultaneously opened on inner surface of top and bottom planar~~  
~~glass sheets, particularly the air discharge hole can be used for placing the~~ degassing  
device, this makes it possible to form a ~~the deepness of groove~~ rather shallow groove at  
the inner surface of the bottom planar glass sheet. As a result, the mechanic strength of  
~~the~~ evacuated glass panel, ~~specially evacuated glass panel specially evacuated glass panel~~  
~~specially the~~ evacuated glass panel of thin type, greatly increased. Moreover, because the  
sealing piece is even with the surface of the glass panel after sealing the air discharge  
hole, the risk of air leak due to damage of the air discharge hole is greatly reduced in the  
following assembling process or practical use.

**Page 7, cancel lines 2-3.**

**Page 7, lines 5-8, amend the paragraph as:**

Fig. 1 is a schematic cross sectional view of an embodiment according to this invention; and

Fig. 2 is a schematic cross sectional view of another embodiment according to this invention.

**Page 7, lines 10-11, amend the paragraph as:**

The present invention will be described in more detail by way of embodiments with reference to the accompanied ~~accompany~~ drawings as follows.

**Page 7, lines 13-22, amend the paragraph as:**

As shown in Fig. 1, on the inner surface of top planar glass sheet 1 and bottom planar glass sheet 2 two grooves 3 are simultaneously opened, and in groove 3 the degassing device [[3]] 4 is placed in the groove 3, ~~there by~~ thereby increasing the degree of evacuation and radiation resistance. The ~~two~~ two simultaneously opened grooves avoid the difficulty of creating the ~~due to~~ small space of the evacuated chamber. The low melting point glass powder is firstly applied in the ~~between~~ groove 3 and degassing device, then the degassing device is placed. After ~~after~~ sintering, the low melting point glass powder is solidified to form ~~forming~~ a low melting point glass powder layer 5. The ~~formed~~ low melting point glass powder layer 5 ~~fixed~~ fixes the degassing device 4 in groove 3.

**Page 8, lines 1-4, amend the paragraph as:**

After the step operation of evacuation of the evacuated glass panel vaporization



activated by high frequency is performed in order to ~~remove~~ absorb residual gas and increase degree of evacuation, ~~making this embodiment have~~ creating thermo and sound insulating effect for the embodiment.

**Page 8, lines 5-8, amend the paragraph as:**

Moreover, because the low melting point glass powder has thermal conductivity far lower than that of glass, ~~the instantaneous~~ instantaneously heating the degassing device cannot break ~~up~~ the glass, thereby increasing the yield ~~ratio~~ of qualitatively finished product.

**Page 8, lines 10-16, amend the paragraph as:**

As shown in Fig. 2, on the surface of the top planar glass sheet, an air discharge hole 12 for evacuation is opened. ~~Around~~, ~~around~~ the periphery of the ~~said~~ air discharge hole 12 ~~the outer surface of glass sheet~~ a concave portion 122 is opened on the outer surface of the glass sheet. ~~The~~, ~~said~~ concave portion 122 can receive a sealing piece 6 and the, ~~said~~ sealing piece 6 is fixed in the concave portion 122 through the low melting point glass powder layer 5 ~~is fixed in said concave portion 122, and to~~ close the ~~said~~ air discharge hole 12 after evacuation of the evacuated glass panel.

**Page 8, lines 17-21, amend the paragraph as:**

The ~~Said~~ sealing piece has a thickness corresponding to ~~the total thickness of the depth~~ low melting point glass powder layer 5, ~~and equal to the deepness of the concave portion 122, there by~~ thereby making the area around the surface of the place of sealing air discharge hole 12 sufficiently even, and thus the problem of air leak can be avoided.

**Page 8, line 22 to page 9 line 2, amend the paragraph as:**

On the inner surface of bottom glass sheet 2 a groove 3 is opened for placing the degassing device 4, and the position of said groove 3 is lined up with the same as that of said air discharge hole 12 on glass sheet 1.

**Page 9, lines 3-7, amend the paragraph as:**

In the present invention, During placing the degassing device 4 with help of the air discharge hole 12 the upper end of degassing device 3 can be inserted insert into said air discharge hole 12. This makes it possible to form ~~this allows make the deepness of~~ groove 3 rather shallow, and the mechanical strength of the evacuated glass panel is increased, thus suitable for production of evacuated glass panels having small thickness.

**Page 9, lines 8-15, amend the paragraph as:**

At last, it should be noted[[],] that above-mentioned embodiments are employed only for description of the technical schemes of the present invention and should not be limited thereon, although deemed as limiting the scope of the invention. Although the present invention has been ~~detailely~~ described in detail, it should be apparent to those of ordinary skill ~~skilled~~ in the art that modifications and variations may be made without departing from the spirit and scope of the technical schemes of the present invention, and all those ~~they~~ should be included within the scope of appended claims.